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**(54) SURFACE-COVERING CEMENTED CARBIDE ALLOY CUTTING TOOL HAVING HARD COVERING LAYER EXHIBITING EXCELLENT CHIPPING RESISTANCE**

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a surface-covering cemented carbide alloy cutting tool having a hard covering layer exhibiting excellent chipping resistance.

**SOLUTION:** This surface-covering cemented carbide alloy cutting tool is composed of a tungsten carbide group cemented carbide alloy base body and a hard covering layer formed on the body through vacuum evaporation, having a thickness of 3 to 25  $\mu\text{m}$  in total average, and composed of one or both of Ti compound layers selected from the group consisting of a TiC layer, a TiN layer and a TiCN layer each having a thickness of 0.1 to 0.5  $\mu\text{m}$  and having a granular crystal structure, a TiCN layer having a thickness of 2 to 15  $\mu\text{m}$  and having a longitudinally grown crystal structure, and an  $\text{Al}_2\text{O}_3$  layer having a thickness of 0.5 to 8  $\mu\text{m}$  and having a granular crystal structure, the TiCN layer which constitutes the hard cover layer and which has a longitudinal granular crystal structure being composed of a I-TiCN layer having an upper surface part with a thicknesswise concentration gradient of C and N, which satisfies  $x: 0.65$  to  $0.95$  and a lower surface part with a thicknesswise concentration gradient of C and N, which satisfies  $x: 0.65$  to  $0.95$  when the upper and lower surface parts are exhibited by the following formula:  $\text{TiC}_{1-x}\text{N}_x$ , and the concentrations of C and N being stepless or stepwise changed.

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